EBC plant together with the TDM plant -- so the reader cannot readily identify the actual potential reduction in water consumption. Moreover, simply stating the number of gallons of water that might be saved from evaporation does not provide adequate context for evaluation. The DEIS elsewhere notes that even at the rates of water consumption associated with the wet cooling systems current in use at the plants, the impacts to the Salton Sea are de minimis -- perhaps accelerating by a few days (over a period of more than 30 years) the point in time at which salinity levels in the Sea might reach the critical concentration of 60,000 mg/l. Even if this impact were reduced by 90%, it could not reasonably justify the cost and technical uncertainty of a dry cooling (or wet-dry cooling) retrofit. Moreover, the discussion of the alternative cooling technologies fails to acknowledge that a reduction in the amount of water used for cooling purposes also would reduce the amount of wastewater that would need to be treated by the power plants, therefore also would reduce the water quality benefits associated with removal of pollutants that otherwise would reach the New River and the Salton Sea. 0018-13 (cont.)

2. Mitigation

The DEIS considers potential off-site measures for mitigating impacts from air emissions from the power plants, specifically in the form of emission reductions from other sources to offset emissions from the power plants. Unfortunately, like the discussion about alternative technologies, the discussion in the DEIS about mitigation is not properly focused on the emissions that properly could be the subject of a mitigation requirement in connection with the approval of the transmission lines, and does not provide an adequate context for assessing the cost-effectiveness of the various mitigation measures that are identified. The final EIS should remedy these deficiencies. 0018-14

As an initial matter, any consideration of mitigation should be limited solely to significant, adverse impacts attributable to the operation of the EBC and TDM plants. As noted above, these are the only facilities whose impacts could be said to be caused by the transmission line approvals. All three turbines at the EAX plant would operate regardless of whether the BCP transmission line is permitted to operate. A mitigation condition imposed in connection with the issuance of a federal permit must be reasonably related to the impacts associated with the action for which the permit is sought.[8] The Agencies thus have no legal authority to condition the approval of the BCP line on mitigation measures to address impacts from the EAX plant, just as they would have no legal authority to condition such approval on mitigation measures to address impacts from any other existing source in Mexicali or Imperial County. 0018-14 (cont.)

The discussion of mitigation also should include a more rigorous assessment of the cost-effectiveness of the measures under consideration. The DEIS states that mitigation of power plant air impacts could be cost effective and "viable" but does not provide any analysis to support such a conclusion. See DEIS at S-31 and 4-58. For the most part, the discussion of mitigation measures in the DEIS is vague about which pollutants could be offset and in what quantities. Cost figures are provided for some of the measures considered, but without any indication of the quantity of emissions that would be offset by such measures, so that it not possible even to approximate the costs per ton of emissions offset. Where the DEIS does provide an indication of the scope of the mitigation measures that would be required to offset power plant emissions, it is apparent that the costs of mitigating air impacts are wholly out of 0018-15

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[8] See, e.g., U.S. v. Mango, 199 F.3d 85, 93 (2d Cir. 1999) (holding that conditions imposed in a permit for the discharge of fill material must be reasonably related to the discharge and cannot be used to regulate the larger activity giving rise to the discharge); NRDC v. EPA, 859 F.2d 156, (DC Cir. 1988) (same).

proportion to the minimal environmental benefits, particularly when the analysis is properly focused solely on emissions from the EBC and TDM plants. The DEIS indicates that paving approximately 23 miles of roads in Imperial County could reduce PM_{10} emissions by about 650 tons (presumably, per year). DEIS at 4-59. This figure is substantially larger than the projected annual emissions of PM_{10} from the EBC plant and the TDM plant, which together total only 494 tons per year.[9] Even if the number of road miles to be paved were reduced proportionately, the cost of such an effort would clearly run into the tens of millions of dollars. Costs of this magnitude are not justified when the impacts of power plant emissions of PM_{10} already are demonstrated not to exceed the EPA significance levels used as a benchmark in the DEIS.[10] 0018-15 (ont.)

Finally, the analysis of the mitigation alternative in the final EIS must account for the measures already taken or planned to mitigate air quality impacts from the power plants. In response to concerns expressed about air emissions from the LRPC, InterGen committed voluntarily to install SCR on all three of the EAX turbines. SCR already is installed and operating on the EAX export unit, and is scheduled to be installed and operating at the other two EAX turbines by March of 2005. According to the data shown on Table 4.3-1a, the installation of SCR just on these last two EAX units will result in NOx reductions of 1720 tons 0018-16

[9] Moreover, as noted above, the PM_{10} emission projections for the EBC plant used in the DEIS are far higher than the likely actual emissions.

[10] A number of commenters have criticized the DEIS's use of these EPA significance levels, asserting that they are "not applicable" to power plants. It is true that these significance levels serve a particular regulatory function in connection with the program for permitting of new sources under the Clean Air Act and that this permitting program does not does not apply to sources located in Mexico. As the DEIS makes clear, however, the significance levels are cited not as regulatory requirements but solely as benchmarks to assist the reader to assess the significance of the effects that emissions from the power plants may have on ambient air quality. See DEIS at 4-52 - 4-53. Because the significance levels have been established with reference to human health effects, they provide a useful and appropriate context for evaluating the air quality impacts described in the DEIS.

per year. The installation of SCR on the EAX export unit will result in additional NOx reductions of 860 tons per year. These reductions will completely offset the NOx emissions from the EBC plant, which are only 136 tons per year. The remaining NOx reductions from these EAX units (approximately 2400 tons per year) would be sufficient to offset the projected PM_{10} emissions from the EBC plant at a ratio of more than 10 to 1.[11] Moreover, as noted above, the actual PM_{10} emissions from the EBC plant are likely to be far less than the projected figure of 238 tons per year. The emission reductions resulting from the installation of SCR on the three EAX turbines are thus more than sufficient to offset fully the emissions from the EBC plant. 0018-16 (cont.)

E. Conclusion

The DEIS generally provides a thorough and well-documented description and analysis of the environmental impacts associated with the proposed transmission line projects. Nonetheless, in addition to correcting several minor errors of fact and analysis, the final EIS should supplement or refine the discussion of several issues. In particular, the final EIS should (a) more clearly distinguish the impacts attributable to the transmission line projects from the baseline environmental conditions, (b) acknowledge more clearly (and in some cases eliminate) the conservatism inherent in much of the methodology used to assess the environmental

[11] In its comments on the DEIS, the Border Power Plant working Group endorsed the concept of "cross pollutant offsetting" between NOx and PM_{10}, at a ratio of only 1 to 1. See BPPWG Comments on Draft EIS at 10 (Comment 11). In addition, as explained in the DEIS, NOx emitted from the power plants (and other sources) may interact with ammonia in the ambient air produce particulates in the form of ammonium nitrate. See DEIS at 4-44 to 4-45. The DEIS used a NOx-to-particulate conversion factor of 1.0 to 0.6 to estimate an upper bound impact on ambient concentrations of PM_{10} from the secondary formation of particulates attributable to emissions from the power plants. Id. As noted above, this conversion factor is overly conservative and results in a "gross overestimate." However, even if this conversion factor were reduced by a factor of six (to 0.1), a reduction in NOx emissions of 2400 tons per year would completely offset the projected PM_{10} emissions from the EBC plant.

impacts, and (c) revise the discussion of the "technology" and "mitigation" alternatives to focus only on the impacts from the BCP and TDM plants, and analyze more rigorously the technical feasibility and cost-effectiveness of these alternatives.

<u>List of Appendices</u>

Appendix A

Corrections and Clarifications

A. Corrections of Factual Errors Regarding Configuration and Operation of LRPC

1. The DEIS states that the cooling towers at the LRPC are natural draft towers. DEIS at 2-31. The cooling towers at the LRPC are mechanical draft towers. 0018-17

2. The DEIS states that certain water treatment facilities are "next to" the LRPC. DEIS at S-17. Likewise, on Figures S-7 and 2.2-17, the "La Rosita Tertiary Treatment Plant" is shown outside and adjacent to the LRPC. All of these water treatment facilities are within and are part of the LRPC. 0018-18

3. The DEIS repeatedly states that makeup water for the LRPC is taken from the Zaragoza Lagoons. See, e.g., DEIS at 2-41 (Table 2.5-1), 4-13, 4-19. In fact, the makeup water is municipal wastewater (principally sewage) that is taken at the inlet to the lagoons. As a result, the operation of the LRPC not only reduces the pollutant loading to the New River in the water that it diverts from the lagoons, but also improves the effectiveness of the lagoons by eliminating the overloading of their treatment capacity. 0018-19

4. One commenter asserts that the DEIS provides no information on any wastewater treatment process at the power plants that is specifically designed to remove dissolved solids (TDS). In fact, the DEIS does describe the treatment processes at both the LRPC and the TDM plant that result in the removal of TDS -- which are the biological sewage treatment plant and the lime softening clarifiers. See DEIS at 2-33 to 2-34. The final EIS should clarify this point by describing more explicitly the manner in which TDS is removed during these processes. Specifically, in both the biological treatment plant and the lime softening clarifiers, a portion of the compounds that are dissolved in the influent wastewater are precipitated out during the treatment process and are removed as sludge which is disposed of in a landfill.

   Moreover, data regarding the wastewater quality at the TDM plant confirm that these processes result in the removal of dissolved solids. The TDM treatment system contractor took numerous conductivity readings for the raw water, biological treatment system effluent and lime softener effluent for a five-month period after startup. Average conductivity readings for the three sample points were 1960 microS/cm, 1830 microS/cm, and 1600 microS/cm, respectively. Conductivity (specific conductance) is a measure of the conductive dissolved solids content (TDS) of water. The greater the conductivity, the higher the dissolved solids concentration. The DEIS used a TDS concentration for the inflow the TDM plant of 1200 mg/l. Assuming that the measured conductivity value of 1960 microS/cm is equivalent to a TDS concentration of 1200 mg/l (which yields a reasonable TDS to conductivity ratio of 0.61), the derived TDS 018-20

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concentrations in the biological system and lime softener effluent streams would be 1116 mg/l and 976 mg/l, respectively. In addition, these figures are even lower than the estimated dissolved solids concentrations that were used to calculate mass of TDS removal. (For the TDM plant, the estimated TDS concentrations in the treated water streams from the biological treatment system and the lime softening process were 1180 mg/l and 1000 mg/l, respectively.) Thus, not only does actual operating experience verify the removal of TDS, it also demonstrates that mass of TDS removed is somewhat higher than what was conservatively calculated in the DEIS. 0018-20 (cont.)

5. The draft EIS states that wastewater effluent from the LRPC would be collected in a sump and then discharged to drainage channel where it eventually combines with the effluent from the Zaragoza Lagoons. DEIS at 2-33. The final EIS should include a more complete description of the configuration of the discharge points and the drainage channel system. The wastewater effluent from the LRPC is discharged into a drainage channel that eventually connects to the Drenaje de Internationale, which is a major drainage channel flowing to the east parallel to the U.S.-Mexico border. The Drenaje de Internationale is part of a large network of drainage channels that carry excess irrigation water from agricultural lands in the vicinity of the power plants. The Drenaje de Internationale empties into the New River just south of the border between Mexicali and Calexico. The point at which the power plants discharge into the drainage channel network is about six miles from the point at which the Drenaje de Internationale eventually empties into the New River. The Drenaje de Internationale carries the combined flows of irrigation runoff, effluent from the LRPC and TDM plant, and effluent from the Zaragoza Lagoons. As a result, the quality of the water entering the New River from the drainage channel reflects the characteristics of this combined flow.[1] 0018-21

6. The DEIS states that wastewater collected from operations at the LRPC is discharged "untreated" to the drainage channel network that empties into the New River. DEIS at S-17. This is not correct. Floor and equipment drains are processed through an oil/water separator and demineralizer regeneration wastes are neutralized in a neutralization tank. In addition, to protect the cooling tower from fouling, each cooling tower system has a sidestream filtration system to remove suspended solids from the circulating water (and, thus, from cooling tower blowdown). 0018-22

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[1] Thus, the attempt by one commenter to contrast the beneficial "diluent" effect of the Zaragoza Lagoon effluent on TDS concentrations in the New River to the adverse effect of the "direct discharge" into the New River of effluent from the power plants is based on a fundamental misconception about the configuration of the discharge facilities for these wastewater streams. At no time does the effluent from the plants discharge directly into the New River prior to being diluted by other flows in the Drenaje de Internationale (including the "low salinity" effluent from the Zaragoza lagoons).

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7. One commenter asserts that the cumulative impacts analysis of the EIS must assume the future operation of an additional 600 MW of generating facilities at the LRPC because the BCP transmission line has the capacity to transmit an additional 600 MW of electricity. For the record, there are currently no plans to install any additional generating capacity at the LRPC. 0018-23

B. Other Corrections and Clarifications

1. On page S-26, the DEIS states that EAX plant consumes water at the rate of 4440 acre-ft/yr. The DEIS elsewhere uses the figure of 4940 acre-ft/yr. See, e.g., Tables S-1 and 4.2-1. 0018-24

2. On page 3-22, the DEIS state that the current flow of wastewater entering the Zaragoza lagoons is 27.4 mgd (30,670 acre-ft/yr). This is inconsistent with the figure of 33,200 ac-ft/yr for the flow out of the lagoons which is stated in the following paragraph (and elsewhere in the DEIS). 0018-25

3. Footnote "a" to Table 3.2-4 cites Kasper (2003) as the source of data presented for selenium and total phosphorus. Kasper also is the source for the other data in the table. 0018-26

4. The DEIS states that the concentration of selenium in the lagoon effluent is 0.0011 mg/l. See Tables 3.2-4 and 4.2-2. This figure was calculated by taking the average of all detectable concentrations in lagoon effluent samples. The more commonly accepted convention would have been to use a figure of 50% of the method detection level for samples that in which no selenium was detected. By this method, the average concentration of selenium in the lagoon effluent would be closer to 0.0007 mg/l. 0018-27

5. To calculate the concentration of selenium in the effluent from the LRPC, the DEIS applied a nominal 75% reduction factor to the average selenium concentration in the lagoon effluent. See Table 4.2-2. The LRPC uses lagoon influent, not lagoon effluent. More important, this removal factor should be applied for both the biological sewage treatment plant and the subsequent lime softening process. Using an average concentration of 0.0007 mg/l Se in the raw sewage entering the lagoon, assuming a 75% combined removal through the sewage treatment plant and the lime softener, and using a concentration factor of 4.8 in the LRPC wastewater discharges, we estimate that the selenium concentration in the final effluent from the plant to be 0.0008 mg/l. Attached at Appendix B is a revised table 4.2-2 that shows the estimated selenium removal figures using these revised inputs. 0018-28

6. The DEIS identifies oil- and gas-field brines as a major source of salts "in waters." DEIS at 3-14. It is unclear if this is intended to be a general statement, or a statement about the source of salts in the New River. We are not aware of 0018-29

any oil- or gas-field operations in the area of the New River between Mexicali and the Salton Sea. 0018-29 (cont.)

7. Table 4.2-1 contains a math error. In the "No Action" column, the figure for water discharged from lagoons should be 26,989 ac-ft/yr and the figure for net water delivered to the New River should be 28,260 ac-ft/yr. 0018-30

8. Equation F.8 in Appendix F appears to use an incorrect input to calculate that a period of 0.2 years is required reach equilibrium in response to reduced inflows resulting from power plant operations. Common sense indicates this period should be closer to a year. The text indicates that the new inflow to the Salton Sea with both TDM and LRPC operating would be 1,329,333 ac-ft/yr. At present, inflows to the Sea approximately equal the evaporation rate because the level of the Sea is stable. Thus, multiplying the listed evaporation rate of 5.90 ft/yr by the listed area (234,113 acres) yields a loss due to evaporation of 1,381,267 acre-ft/yr, which should also equal the current inflow. The difference between this inflow figure and the inflow of 1,329,333 acre-ft/yr when both plants are operating is 51,934 acre-ft/yr. This figure is about five time higher than the projected water consumption for the all of the power plants, indicating that the calculated period of 0.2 years is about five times too low. The calculation in Appendix 8 should be redone using the correct flow rates. 0018-31

9. Table 4.2-2 provides no value for the concentration of several pollutants under the "Both Plants Operating" column. Footnote "d" explains that "[d]ischarge from the LRPC and TDM plant occurs at different locations; therefore, no single concentration can be applied to both plants operating." This is not true when the concentrations in the discharge from each plant are equal, as is the case for BOD, COD, phosphorus and selenium. 0018-32

10. Table 9-1, under "Water Resources: (CWA)," states "No NPDES permit required. Other requirements may apply." It is not clear what other Clean Water Act requirements may apply. Certainly, the Clean Water Act does not apply to discharges from the power plants, which are located in Mexico, and which discharge into the New Rive in Mexico. The same is true for TMDLs identified in Table 9-1 as "applicable" to the New River and the Salton Sea. 0018-33

11. Table 9-1, under "Other: Pollution Prevention Act," indicates that the certain release reporting requirements are "potentially applicable." No such requirements apply to the power plants, which are located in Mexico, and it is not clear how such requirements could apply to the transmission lines themselves. 0018-34

APPENDIX B

Table 4.2-1 Water Use for No Plants Operating, No Action, and Proposed Action
(Added columns for EBC Only and EBC & TDM)

Water Use (ac-ft/yr)	No Plants Operating	EBC	TDM	EBC & TDM
Water taken from lagoons	0	2,804	4,372	7,176
Water consumed by plant(s)	0	2,230	3,497	5,727
Water discharged by plant(s) after use	0	574	875	1,449
Water discharged from lagoons	33,200	30,396	28,828	26,024
Net water delivered to New River	33,200	30,970	29,703	27,473
Percent change in water delivered to New River	NA	-6.7	-10.5	-17.3

Table 4.2-2 Projected Annual Operating Parameters
(Added columns for EBC Only and EBC & TDM)

Parameter	No Plants Operating	EBC	TDM	EBC & TDM
Water Volumes				
From lagoons to power plants (ac-ft/yr)	0	2,804	4,372	7,176
Consumed by plant operations (ac-ft/yr)	0	2,230	3,497	5,727
Discharged after use (ac-ft/yr)	0	574	875	1,449
Discharged from lagoons to New River (ac-ft/yr)	33,200	30,396	28,828	26,024
Net volume to the New River (ac-ft/yr)	33,200	30,970	29,703	27,473
Percent change in volume delivered to the New River	NA	-6.7	-10.5	-17.3
TDS				
Concentration in lagoon effluent (mg/l)	1,200	1,200	1,200	1,200
Concentration in discharge water (mg/l)	NA	4,800	4,430	4,577
Concentration load to New River from discharge water (million lbs)	NA	7.5	10.5	18.0
Load to New River from lagoons (million lbs)	108.3	99.2	94.1	84.9
Change in load to New River from lagoons (million lbs)	0.0	-9.1	-14.3	-23.4
Total Load to New River (million lbs)	108.3	106.7	104.6	102.9
Net change in load to New River (million lbs)	0	-1.7	-3.7	-5.4
Percent change in load to the New River	0	-1.5	-3.4	-5.0
TSS				
Concentration in lagoon effluent (mg/l)	59	59	59	59
Concentration in discharge water (mg/l)	NA	5	5	5
Concentration load to New River from lagoons (million lbs)	5.3	4.9	4.6	4.2
Change in load to New River from lagoons (million lbs)	0	-0.45	-0.70	-1.15
Load to New River from plant discharge (million lbs)	NA	0.008	0.012	0.020
Net change in load to New River (million lbs)	0	-0.44	-0.69	-1.13
BOD				
Concentration in lagoon effluent (mg/l)	44	44	44	44
Concentration in discharge water (mg/l)	NA	10	10	10
Load to New River from lagoons (million lbs)	3.97	3.64	3.45	3.11
Change in load to New River from lagoons (million lbs)	0	-0.34	-0.52	-0.86
Load to New River from plant discharge (million lbs)	NA	0.016	0.024	0.039
Net change in load to New River (million lbs)	0	-0.32	-0.50	-0.82
COD				
Concentration in lagoon effluent (mg/l)	162.00	162.0	162.0	162.0
Concentration in discharge water (mg/l)	NA	15.0	15.0	15.0
Load to New River from lagoons (million lbs)	14.61	13.39	12.70	11.46
Change in load to New River from lagoons (million lbs)	0	-1.23	-1.91	-3.15
Load to New River from plant discharge (million lbs)	NA	0.023	0.036	0.059
Net change in load to New River (million lbs)	0	-1.20	-1.87	-3.09
Phosphorus				
Concentration in lagoon effluent (mg/l)	4.3	4.3	4.3	4.3
Concentration in discharge water (mg/l)	NA	1.5	1.5	1.5
Load to New River from lagoons (million lbs)	0.39	0.36	0.34	0.30
Change in load to New River from lagoons (million lbs)	0	-0.03	-0.05	-0.08
Load to New River from plant discharge (million lbs)	NA	0.0023	0.0036	0.0059
Total Load to New River (million lbs)	0.39	0.36	0.34	0.31
Net change in load to New River (million lbs)	0	-0.03	-0.05	-0.08